

ABSTRACT

A toroidal interconnect structure is continuous, symmetrical, and non-breaking for the connection of logic and other resources in a semiconductor or other device. The toroidal interconnect structure allows logical and electrical components that physically are implemented in two-dimensional silicon to be organized and connected in a continuous, homogeneous, symmetrical and non-breaking three-dimensional fashion. Instead of connecting components to their nearest neighbors, the connections in the toroidal interconnect skip adjacent rows and columns of interior components and connect directly to components that are physically two rows or columns away. By continuing to skip rows or columns across the device and eventually looping back and connecting the remaining “skipped” components, the continuous, non-breaking connection path is created.